

I CLAIM

1. A mesa-oxide isolation method comprises steps of:

epitaxy: placing a wafer in a metalorganic chemical vapor deposition (MOCVD) system or a molecular beam epitaxy (MBE) system to grow an epitaxial layer on a

05 surface of the wafer,

spinning photo-resist: spinning photo-resist on an upper surface of the epitaxial layer,

exposing and developing: exposing the wafer under a light to print electric circuit pattern on a masking and
10 soaking the wafer in a developing solution to solve and remove the photosensitive resin,

etching: a portion of the epitaxial layer is removed,

growing a thin oxide layer: growing a thin oxide layer on the area of the epitaxial layer without photo-

15 resist by soaking the wafer in a chemical solution,

removing photo-resist: the photo-resist which is not exposed to the light is removed to form a mesa on the upper surface of the wafer,

metalization: depositing metal connections on the
20 mesa and the wafer.

2. A mesa-oxide guard ring isolation method comprises steps of:

epitaxy: placing a wafer in a metalorganic chemical vapor deposition (MOCVD) system or a molecular beam
25 epitaxy (MBE) system to grow an epitaxial layer on a

surface of the wafer,

spinning the first photo-resist: spinning the first photo-resist on an upper surface of the epitaxial layer,

exposing and developing at the first time: exposing
05 the wafer under a light to print electric circuit pattern on a masking and soaking the wafer in a developing solution to solve and remove the photosensitive resin,

etching at the first time: a portion of the epitaxial layer is removed,

10 growing a thin oxide layer: growing a thin oxide layer on the area of the epitaxial layer without photo-resist by soaking the wafer in a chemical solution,

removing photo-resist at the first time: the photo-resist which is not exposed to the light is removed to
15 form a mesa on the upper surface of the wafer,

spinning the second photo-resist: spinning the second photo-resist on an upper surface of the epitaxial layer,

exposing and developing at the second time: exposing the wafer under a light to print electric circuit pattern
20 on a masking and soaking the wafer in a developing solution to solve and remove the photosensitive resin,

etching at the second time: a portion of the thin oxide layer is removed,

removing photo-resist at the second time: the photo-resist which is not exposed to the light is removed to
25

form a mesa on the upper surface of the wafer and to form an oxide ring on the surrounding of the mesa,

metalization: depositing metal connections on the mesa and the wafer.